In the Claims

1. (currently amended) A differential ~~permeometer~~ permeameter comprising ~~of;~~

a pair of flow systems, each said flow system being disposed for a flow of fluid therethrough;

a reservoir connected in common to said flow systems to receive a flow of fluid from each said system;

a fan for drawing fluid through said systems into said reservoir;

a pair of clamping devices, each said clamping device being disposed in~~;~~ a respective flow system to hold a porous sheet-like material sample across said respective system for a flow of fluid therethrough; and

a pair of orifice plates, each said plate being disposed in a respective flow system between said clamping device and said reservoir to create a measurable pressure drop in a fluid passing therethrough.

2. (currently amended) A differential permeameter as set forth in claim 1 wherein ~~velocity or flow rate indication or measurement device,~~ each said plate is ~~being~~ disposed in a respective flow system between said clamping device and said reservoir therein ~~referenced in claim 1~~.

3.(currently amended) A differential ~~permeometer~~ permeameter as set forth in claim 1 which further comprises a pair of honeycomb structures, each said structure being disposed in a respective one of said systems between said orifice plate therein and said reservoir for passage of a fluid therethrough to effect a laminar andf steady flow of fluid therethrough. ~~The honeycomb structures help ensure that flow through the reference tubes is laminar and steady, so that test measurements are accurate.~~

4. (currently amended) A differential ~~permeometer~~ permeameter as set forth in claim 1 further comprising a dual motorized screw drive disposed between said systems and connected to and between said pair of orifice plates for simultaneous movement ~~hereof~~ thereof to adjust an orifice size thereof.

5. A differential ~~permeometer~~ permeameter as set forth in claim 1 further comprising a first pressure transducer positioned in one of said systems to measure a pressure drop across a test sample in said one system, a second pressure transducer positioned in said one system to measure a pressure drop across said orifice plate therein, a third pressure transducer positioned in the other of said systems to measure a pressure drop across said orifice plate therein, a fourth pressure transducer for measuring a differential pressure between said systems and a computer connected to each said transducer to receive a signal therefrom indicative of the pressure measured thereby and to calculate a differential permeability value of a sample in said one system in dependence on said signals.

6. (original) A method for determining the permeability of a test sample comprising the steps of;

placing a sheet-like reference sample of known permeability in communication with a reference fluid flow system;

placing a sheet-like test sample of unknown permeability in communication with a test fluid flow system;

supplying a fluid flow stream across both test and reference samples;

adjusting the pressure drop of the fluid flow stream across one or both samples to a fixed standard;

measuring the fluid flow through the test fluid flow system by measuring the pressure drop across a flow device within the test fluid flow system;

measuring the fluid flow through the reference fluid flow system by measuring the pressure drop across a flow device within the reference fluid flow system;

measuring a pressure differential between the test fluid system and the reference fluid system; and

calculating the permeability of the test sample by using the pressure differential across the test fluid flow system, the known permeability of the test sample, and the fluid flow through both the test fluid flow system and the reference fluid flow system.